AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-19 cancelled

20. (new) An information recording medium on which an entire stream including a plurality of portion streams, each of which comprises a series of content information, is multiplexed-and-recorded by a unit of packet, which is a physically accessible unit, said information recording medium comprising:

an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet;

a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and

an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information.

21. (new) The information recording medium according to claim 20, wherein the one correspondence definition information defines the correspondence relationship by interpretation rules which mutually differ among a plurality of object data stored in said object data file and

the another correspondence definition information defines the correspondence relationship by interpretation rules which are the same among the plurality of object data.

22. (new) The information recording medium according to claim 20, wherein the entire stream includes two or more portion streams, each comprising video information as the series of content information.

23. (new) An information recording apparatus for multiplexing and recording an entire stream including a plurality of portion streams, each of which comprises a series of content information, onto an information recording medium by a unit of packet, which is a physically accessible unit, said information recording apparatus comprising:

a first recording device for recording an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet;

a second recording device for recording a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and

a third recording device for recording an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information.

24. (new) The information recording apparatus according to claim 23, wherein

the one correspondence definition information defines the correspondence relationship by interpretation rules which mutually differ among a plurality of object data stored in said object data file and

the another correspondence definition information defines the correspondence relationship by interpretation rules which are the same among the plurality of object data.

25. (new) The information recording apparatus according to claim 23, wherein

the entire stream comprises at least one portion of a transport stream of MPEG 2 which is digitally transmitted and broadcasted and is received at a set top box and

said first recording device records said object data file such that one correspondence definition information, which defines the correspondence relationship includes in the received entire stream, is included in one portion of the object data in the multiplexed form with the content information.

26. (new) An information recording method of multiplexing and recording an entire stream including a plurality of portion streams, each of which comprises a series of content information, onto an information recording medium by a unit of

packet, which is a physically accessible unit, said information recording method comprising:

a first recording process of recording an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet;

a second recording process of recording a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and

a third recording process of recording an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information.

27. (new) The information recording method according to claim 26, wherein

the one correspondence definition information defines the correspondence relationship by interpretation rules which mutually differ among a plurality of object data stored in said object data file and

the another correspondence definition information defines the correspondence relationship by interpretation rules which are the same among the plurality of object data.

28. (new) The information recording method according to claim 26, wherein

the entire stream comprises at least one portion of a transport stream of MPEG 2 which is digitally transmitted and broadcasted and is received at a set top box and

said first recording process records said object data file such that one correspondence definition information, which defines the correspondence relationship included in the received entire stream, is included in one portion of the object data in the multiplexed form with the content information.

29. (new) An information reproducing apparatus for reproducing at least one portion of a recorded entire stream from an information recording medium on which the entire stream including a plurality of portion streams, each of which comprises a series of content information, is multiplexed-and-recorded by a unit of packet, which is a physically accessible unit, said information recording medium comprising: an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet; a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the

correspondence relationship aside from the one correspondence definition information,

said information reproducing apparatus comprising:

a reading device for physically reading information from said information recording medium; and

a reproducing device for reproducing the object data by demultiplexing the information read by said reading device with destroying the one correspondence definition information on the basis of the reproduction control information and the reproduction sequence information included in the information read by said reading device.

30. (new) The information reproducing apparatus according to claim 29, wherein said reproducing device demultiplexes such that a packet corresponding to one or a plurality of portion streams that are reproduction objects out of the plurality of packets multiplexed is extracted in accordance with the another correspondence definition information included in the information read by said reading device.

31. (new) An information reproducing method of reproducing at least one portion of a recorded entire stream from an information recording medium on which the entire stream including a plurality of portion streams, each of which comprises a series of content information, is multiplexed-and-recorded by a unit of packet, which is a physically accessible unit, said information recording medium comprising: an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which

itself is multiplexed by the unit of packet; a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information,

said information reproducing method comprising:

a reading process of physically reading information from said information recording medium; and

a reproducing process of reproducing the object data by demultiplexing the information read by said reading device with destroying the one correspondence definition information on the basis of the reproduction control information and the reproduction sequence information includes in the information read by said reading device.

32. (new) The information reproducing method according to claim 31, wherein said reproducing process demultiplexes such that a packet corresponding to one or a plurality of portion streams that are reproduction objects out of the plurality of packets multiplexed is extracted in accordance with the another correspondence definition information included in the information read by said reading process.

33. (new) An information recording and reproducing apparatus for recording an entire stream onto and reproducing at least one portion of the recorded entire stream from an information recording medium on which the entire stream including a plurality of portion streams, each of which comprises a series of content information, is multiplexed-and-recorded by a unit

of packet, which is a physically accessible unit, said information recording medium comprising: and object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet; a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information,

said information recording and reproducing apparatus comprising:

a first recording device for recording said object data file;

a second recording device for recording said reproduction sequence information file;

a third recording device for recording said object information file;

a reading device for physically reading information from said information recording medium; and

a reproducing device for reproducing the object data by demultiplexing the information read by said reading device with destroying the one correspondence definition information on the basis of the reproduction control information and the

reproduction sequence information included in the information read by said reading device.

34. (new) An information recording and reproducing method of recording an entire stream onto and reproducing at least one portion of the recorded entire stream from an information recording medium on which the entire stream including a plurality of portion streams, each of which comprises a series of content information, is multiplexed-and-recorded by a unit of packet, which is a physically accessible unit, said information recording medium comprising: an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet; a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information,

said information recording and reproducing method comprising:

a first recording process of recording said object data file;

a second recording process of recording said reproduction sequence information file;

a third recording process of recording said object information file;

a reading process of physically reading information from said information recording medium; and

a reproducing process of reproducing the object data by demultiplexing the information read by said reading process with destroying the one correspondence definition information on the basis of the reproduction control information and the reproduction sequence information included in the information read by said reading process.

35. (new) A computer program product for controlling record and for tangibly embodying a program of instructions executable by a computer to make the computer function as at least one portion of a first recording device, a second recording device, and a third recording device,

the computer being provided in an information recording apparatus for multiplexing and recording an entire stream including a plurality of portion stream, each of which comprises a series of content information, onto an information recording medium by a unit of packet, which is a physically accessible unit, said information recording apparatus comprising:

said first recording device for recording an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet;

said second recording device for recording a reproduction sequence information file for storing reproduction sequence

information which defines a reproduction sequence of the object data stored in said object data file; and

said third recording device for recording an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information.

36. (new) A computer program product for controlling reproduction and for tangibly embodying a program of instruction executable by a computer to make the computer function as at least one portion of a reproducing device,

the computer being provided in an information reproducing apparatus for reproducing at least one portion of a recorded entire stream from an information recording medium on which the entire stream including a plurality of portion streams, each of which comprises a series of content information, is multiplexed-and-recorded by a unit of packet, which is a physically accessible unit, said information recording medium comprising: an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet; a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and an object information file for storing, as reproduction control information for

controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information,

said information reproducing apparatus comprising:

a reading device for physically reading information from said information recording medium; and

said reproducing device for reproducing the object data by demultiplexing the information read by said reading device with destroying the one correspondence definition information on the basis of the reproduction control information and the reproduction sequence information included in the information read by said reading device.

37. (new) A computer program product for controlling record and reproduction and for tangibly embodying a program of instruction executable by a computer to make the computer function as at least one portion of a first recording device, a second recording device, a third recording device, and a reproducing device,

the computer being provided in an information recording and reproducing apparatus for recording an entire stream onto and reproducing at least one portion of the recorded entire stream from an information recording medium on which the entire stream including a plurality of portion stream, each of which comprises a series of content information, is multiplexed-and-recorded by a unit of packet, which is a physically accessible unit, said information recording medium comprising: an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition

information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet; a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information,

said information recording and reproducing apparatus comprising:

said first recording device for recording said object data file;

said second recording device for recording said reproduction sequence information file;

said third recording device for recording said object information file;

a reading device for physically reading information from said information recording medium; and

said reproducing device for reproducing the object data by demultiplexing the information read by said reading device with destroying the one correspondence definition information on the basis of the reproduction control information and the reproduction sequence information included in the information read by said reading device.

38. (new) A data structure including a control signal, in which an entire stream including a plurality of portion streams, each of which comprises a series of content

information, is multiplexed by a unit of packet, which is a physically accessible unit, having:

an object data file, which is a logically accessible unit, for storing (i) object data which is multiplexed by the unit of packet and which comprises a plurality of packets, each storing therein a piece of the content information, and (ii) one correspondence definition information which defines a correspondence relationship between a plurality of packets multiplexed on a time axis and the plurality of portion streams and which itself is multiplexed by the unit of packet;

a reproduction sequence information file for storing reproduction sequence information which defines a reproduction sequence of the object data stored in said object data file; and

an object information file for storing, as reproduction control information for controlling the reproduction of said object data file, another correspondence definition information which is not multiplexed by the unit of packet and which defines the correspondence relationship aside from the one correspondence definition information.